

ABSTRACT

There is a need for a small and fast optical zoom device that can change magnification. Conventional zoom devices require coupled mechanical motions to adjust the axial
5 separations between individual or groups of elements in order to change the optical magnification. The mechanical motions decrease the speed of zooming, increase space and weight for zoom system, may induce unwanted jitter, and require large power consumption. In addition, the
10 mechanical zoom system is restricted to magnifying the area on-axis. To solve problems of conventional zoom system, the zoom system utilizing one or more variable focal length micromirror array lenses without macroscopic mechanical motion of lenses is invented.

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